

a1  
software package 30.

Replacement for the third full paragraph, at page 10, lines 11-14:

a2  
In the following example, shown in Figures 4A, 4B and 4C, the package contains two composite packages a and c, and three simple packages b, d and e. The intent is to install package a on targets P, Q, R, S and T. Package a is an open package, and package c is considered in both the open case in Figure 4B and the closed case shown in Figure

4C.

Replacement for the fourth paragraph, at page 10, line 24:

a3  
In the case where package c is closed (Figure 4C):

#### REMARKS

Upon entry of the foregoing amendment, Claims 1-9 are pending in the application, with Claims 1, 8 and 9 being the independent claims. This Amendment seeks to correct typographical errors in the Specification. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above Amendment and the following Remarks, Applicants respectfully request that the Examiner reconsider all outstanding rejections and that they be withdrawn.

#### Rejections Based on Bohannon

The Examiner rejected pending Claims 1, 3 and 8 under 35 U.S.C. § 103(a) as being obvious in light of U.S. Patent 6,134,324 issued to Bohannon et al. (hereinafter "Bohannon"). Office Action at paragraph 3. Applicants respectfully traverse these rejections below.

First, the present invention relates to method and apparatus for software distribution across a network which minimizes the overall bandwidth used to transmit the software. That is,

the present invention is aimed at the distribution of software packages within a network that employs the client-server paradigm--a series of computers, routers, etc. (*i.e.*, nodes) connected via communications links. The present invention utilizes various algorithms and protocols depending on the network architecture being used at the section of the network in question (*e.g.*, IEEE 801.1d, RFC 1716 and 1812, OSPF, etc.).

Second, it is admitted that Bohannon discloses a system for distributing software. However, this is where any similarity with the present invention ends. In contrast to the present invention, Bohannon discloses a system for a mass distribution of software contained on CD-ROMs and limiting access to such software. More specifically, Bohannon states:

Another feature of the present invention is that encryption keys for successive releases of a particular software product are re-used such that a customer may be *shipped* a new volume set of *storage media devices* [*i.e.*, CD ROMs] and re-use his old site configuration file to load the updated software products. This simplifies mass distribution of software products, because only the site configuration files must be uniquely generated and *shipped separately for each customer*. The *software products themselves are simply duplicated and shipped to every customer*.

Bohannon at column 3, lines 37-47 (emphasis added). That is, the Bohannon distribution "network" is the U.S. mail or the like. Nowhere does Bohannon discuss, as claimed in the present invention, distribution via a network with (real-time) communications between a distribution server, a plurality of nodes and communication links. This is apparent from the single computer schematic shown in Figure 1 of Bohannon ("Fig. 1 is a high level block diagram showing the environment of the present invention."). *Id.* at column 4, lines 14-15.

Third, the Examiner relies heavily on Figure 16 in stating that Bohannon renders independent Claims 1 and 8 obvious. See Office Action at pages 1-2. However, the text describing Figure 16 reads:

FIG. 16 shows a . . . software vendor 1602 who may license a third party vendor 1604 to distribute its software products to customers 1606,

1608, and 1610.

In the present invention, the third party vendor 1604 is provided with a revised product look-up file. The revised product look-up file is a version of the product look-up file 904 minus any products and/or encryption key codes that the software vendor 1602 does not want the third party vendor 1604 to distribute. The third party vendor 1604 is thereby restricted in the type of site configuration files 128 that it can generate and distribute. As described heretofore, the third party vendor 1604 *can then send to its customers (1) a copy of the software products on one or more volumes of CD-ROM storage device 126 and (2) a unique site configuration file 128.*

Bohannon at column 15, lines 5-21 (emphasis added). The Examiner admits that Bohannon fails to teach an apparatus with a distribution node, target nodes and branch nodes that are all in communication. See Office Action at page 2. Yet, the Examiner has failed to show how a "package and mail CD ROMs with security codes to be installed on stand-alone computers" system, as disclosed in Bohannon (see column 2, lines 46-50), teaches or suggests a client-server network distribution system as claimed in independent Claims 1 and 8.

Below is independent Claim 1 highlighting some of the features not taught nor suggested by the applied reference:

Apparatus for hierarchical software distribution allowing distribution of a software package comprising at least a first and second package to a plurality of target nodes, said apparatus comprising:

*a distribution node for transmitting packages of software;*

*a first branch node in communication with said distribution node, said first branch node being arranged to receive said software package from said distribution node;*

*first and second target nodes, said first target node being in communication with said first branch node via a first network link, and said second target node being in communication with said first branch node via a second network link; said first package already being present on said second target node;*

*said first branch node being arranged to transmit said software package over said first network link, and said second package over only said second network link;*

whereby both the first and second packages are distributed to both said first and second target nodes.

(Emphasis added.)

Further, dependent Claim 3 is allowable for at least the same reasons as the independent claims and further in view of its own respective features.

#### Rejections Based on Bohannon and Otto

The Examiner rejected pending Claims 2, 4, 5-7, and 9 under 35 U.S.C. § 103(a) as being obvious in light of Bohannon in view of U.S. Patent 5,706,431 issued to Otto (hereinafter “Otto”). Office Action at paragraph 4. Applicants respectfully traverse these rejections below.

First, Otto discloses a system where:

[A] method of operation, for propagating revisions through a communications network, wherein . . . (1) status reporting circuitry, associated with a second node of the communications network, for collecting and transmitting a current status of second node information stored in a memory of the second node, (2) first information revising circuitry, associated with a first node of the communications network, for *receiving the current status from the second node, determining as a function of the current status whether a revision of the second node information is required and, if the revision is required, transmitting the revision to the second node to revise the second node information* and (3) second information revising circuitry, associated with the second node of the communications network, for *receiving a current status from a third node of the communications network, determining as a function of the current status from the third node whether a revision of third node information stored in a memory of the third node is required and . . .*

Otto at column 12, lines 24-52; *see* Fig. 5. Put more simply, the Otto system requires the nodes to initiate the software distribution process by first sending a status report to a server (or higher-level node).

In contrast to the methodology of Otto, the present invention (and more specifically, independent Claim 9) recites a method where:

“Repackaging can occur whenever subsequent targets (those including and below the one being sent to) require only a portion of the contents of the package. *The determination of what package contents are required at each target takes place at the DS [(Distribution Server)] (and is included in the transfer control file) before the transfer begins.*”

Specification at page 10, lines 1-5 (emphasis added).

Given the above-described deficiencies of Bohannon, the combination of the references fail to suggest or teach all the elements of the Claim 9. Below is independent Claim 9 highlighting some of the features not taught or suggested by the applied references, either alone or in combination:

A method of distributing *a software package to at least a first and second target node* over at least *one common network link*, said software package comprising at least a first package and a second package, said first software package already being present on said second node, said method comprising the steps of

*sending said software package over said common network link;*  
thereafter sending *only said second package to said second target node;*  
and sending said software package to said first target node;

*whereby both the first and second packages are distributed to both said first and second target nodes.*

(Emphasis added.)

Further, the dependent claims are allowable for at least the same reasons set forth herein with respect to the independent Claim 9, and further in view of their own respective features.

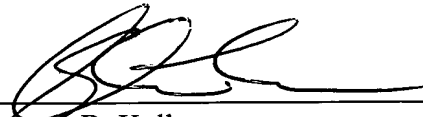
### **CONCLUSION**

Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. Applicants therefore

respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. The Examiner is invited to contact the undersigned by telephone should the Examiner believe that personal communication will expedite prosecution of this application.

Respectfully submitted,

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**MARKED-UP COPY OF PARAGRAPHS, AS AMENDED**

Replacement for the first full paragraph, at page 7, lines 4-8:

Each of the branching nodes in the tree needs to be provided with information regarding which nodes require particular simple packages 34 and composite packages 32 constituting an overall software package 30 to be sent. An example of such a software package is shown in Figure [3A] 4A. According to this embodiment, this determination is made at the DS 10 and can be included in a transfer control file sent along with the software package 30.

Replacement for the third full paragraph, at page 10, lines 11-14:

In the following example, shown in Figures 4A, 4B and 4C, the package contains two composite packages a and c, and three simple packages b, d and e. The intent is to install package a on targets P, Q, R, S and T. Package a is an open package, and package c is considered in both the open case in Figure [3B] 4B and the closed case shown in Figure [3C] 4C.

Replacement for the fourth paragraph, at page 10, line 24:

In the case where package c is closed (Figure [3C] 4C):